BC

Type BC, Block Couplings

The block coupling is a very old design, and works on the same principle as an Oldham coupling -- in fact, it's simply a variation of an Oldham coupling with the grooves in the hub, instead of the mid. The square mid rides in these wide grooves.

The midsection of the BC is large enough to contain an internal grease reservoir, which makes this coupling particularly useful for dirty or harsh operating conditions. Block couplings do not have a sacrificial midsection that serves as a mechanical fuse under overload, but other than this, they offer all of the advantages of a conventional Oldham coupling, including large radial and axial misalignment, low reactive forces, homokinetic transmission, zero backlash, and high torsional stiffness.

Few manufacturers still offer the block coupling, as it's been replaced by the easier-to-produce conventional Oldham coupling. OEP's type BC block coupling is a precision-CNC-machined unit produced with tight tolerances, optimal surface finishes, the latest surface treatments, and a geometry that maximizes peak torque. Hubs are machined from high-strength alloys like 7075 and 17-4.

HUB materials	
code	material
A	aluminum
B	brass
S	stainless steel

MID materials	
code	material
D	Delrin
T	high-temp plastic
U	Urethane

Physical specifications of BC vary with outer diameter and midsection material.

Moment of inertia and mass vary with hub material; this data is based on aluminum hubs.

BC performance specs

part number														peak torque		static break torque		torsional stiffness		moment of inertia,	mass,	maximum misalignment					max speed,	maximum ambient temperature	
																						radial		angular	axial				
type (OC, OI, etc.)	outer diameter, in 16ths of an inch	placeholder, D	bore one size, in 16ths of an inch (E) or in mm (M)	E = English, M = metric bore	bore one type (b = blind, T = thru, K = keyway)	bore two size, in 16ths of an inch (E) or in mm (M)	E = English, M = metric bore	bore two type (b = blind, T = thru, K = keyway)	S = set screw, C = clamping	hub material (see chart at right)	placeholder, "HUB"	midsection material (see chart at right)	placeholder, "MID"	Nm	in-lb	Nm	in-lb	Nm/rad	in-lb/rad	(10^8)kgm^2	grams	inches	mm	degrees	inches	mm	rpm	deg F	deg C
BC	4	D	2	M	B	2	M	B	S	A	HUB	D	MID	0.08	0.73	0.98	8.7	15	133	0.30	0.49	0.002	0.05	0.3	0.003	0.08	5000	170	77
BC	6	D	2	E	B	3	E	T	S	A	HUB	D	MID	0.28	2.48	2.9	25.7	45	398	2.27	1.64	0.003	0.08	0.3	0.003	0.08	5000	170	77
BC	8	D	2	E	B	4	E	T	S	A	HUB	D	MID	0.66	5.8	5.6	49.6	79	699	9.37	3.96	0.005	0.13	0.3	0.003	0.08	4000	170	77
BC	10	D	6	M	B	4	E	B	S	A	HUB	D	MID	1.3	11.5	8.6	76.1	115	1018	25.9	7.4	0.008	0.20	0.3	0.003	0.08	4000	170	77
BC	12	D	4	E	T	4	E	T	C	A	HUB	D	MID	2.25	19.9	14	124	155	1372	64.2	12.0	0.01	0.25	0.3	0.004	0.10	3600	170	77
BC	16	D	6	E	T	6	E	T	C	A	HUB	D	MID	5.3	46.9	23.5	208	270	2390	277	31	0.015	0.38	0.3	0.004	0.10	3600	170	77
BC	21	D	8	E	T	8	E	T	S	A	HUB	D	MID	12	106	63	558	810	7169	1416	95	0.016	0.41	0.3	0.006	0.15	3000	170	77
BC	26	D	8	E	T	8	E	T	S	A	HUB	D	MID	22.8	202	80	708	1570	13896	3483	154	0.02	0.51	0.3	0.006	0.15	3000	170	77
BC	32	D	8	E	T	10	E	T	S	A	HUB	D	MID	42.6	377	134	1186	1800	15931	9674	286	0.03	0.76	0.3	0.01	0.25	2500	170	77
BC	36	D	8	E	T	10	E	T	S	A	HUB	D	MID	60.7	537	210	1859	3400	30093	20560	484	0.035	0.89	0.3	0.01	0.25	2500	170	77
BC	4	D	2	M	B	2	M	B	S	A	HUB	T	MID	0.08	0.74	1.02	9.0	16	142	0.30	0.49	0.002	0.05	0.3	0.003	0.08	5000	430	221
BC	6	D	2	E	B	3	E	T	S	A	HUB	T	MID	0.29	2.57	3	26.6	50	443	2.27	1.64	0.003	0.08	0.3	0.003	0.08	5000	430	221
BC	8	D	2	E	B	4	E	T	S	A	HUB	T	MID	0.67	5.9	5.7	50.4	85	752	9.37	3.96	0.005	0.13	0.3	0.003	0.08	4000	430	221
BC	10	D	6	M	B	4	E	B	S	A	HUB	T	MID	1.32	11.7	8.75	77.4	120	1062	25.9	7.4	0.008	0.20	0.3	0.003	0.08	4000	430	221
BC	12	D	4	E	T	4	E	T	C	A	HUB	T	MID	2.27	20.1	14.2	126	160	1416	64.2	12.0	0.01	0.25	0.3	0.004	0.10	3600	430	221
BC	16	D	6	E	T	6	E	T	C	A	HUB	T	MID	5.35	47.4	23.9	212	280	2478	277	31	0.015	0.38	0.3	0.004	0.10	3600	430	221
BC	21	D	8	E	T	8	E	T	S	A	HUB	T	MID	12.1	107	64.5	571	830	7346	1416	95	0.016	0.41	0.3	0.006	0.15	3000	430	221
BC	26	D	8	E	T	8	E	T	S	A	HUB	T	MID	22.9	203	82	726	1600	14161	3483	154	0.02	0.51	0.3	0.006	0.15	3000	430	221
BC	32	D	8	E	T	10	E	T	C	A	HUB	T	MID	42.8	379	137	1213	1830	16197	9674	286	0.03	0.76	0.3	0.01	0.25	2500	430	221
BC	36	D	8	E	T	10	E	T	S	A	HUB	T	MID	61	540	215	1903	3450	30535	20560	484	0.035	0.89	0.3	0.01	0.25	2500	430	221

These fields within part number have no effect on performance specifications